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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,410	09/23/2003	Scott R. Culler	59038US002	2023

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EXAMINER	
MARCHESCHI, MICHAEL A	
ART UNIT	**PAPER NUMBER**
1755	

DATE MAILED: 12/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/668,410	CULLER ET AL.	
	Examiner	Art Unit	
	Michael A. Marcheschi	1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 October 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-14 and 16-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-14 and 16-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 April 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/16/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/12/05 has been entered.

After further review of the prosecution history, the amendment to the specification, as filed on 4/18/05, have **not** been entered because **all** of the page and line numbers defined for the replacement paragraphs do not correlate to the page and line numbers of the original specification.

Specifically, applicants replace 14 paragraphs (drawing description) beginning on page 2, line 15, however, these replacement paragraphs actually begin on page 2, line 26 of the original specification.

Applicants replace the paragraph beginning on page 5, line 17, however, this replacement paragraph actually begins on page 3, line 28 of the original specification.

Applicants replace the paragraph beginning on page 8, line 28, however, this replacement paragraph actually begins on page 7, line 14 of the original specification.

Applicants replace the paragraph beginning on page 10, line 1, however, this replacement paragraph actually begins on page 8, line 12 of the original specification.

Applicants replace the paragraph beginning on page 14, line 22, however, this replacement paragraph actually begins on page 13, line 4 of the original specification.

Applicants replace the paragraph beginning on page 15, line 17, however, this replacement paragraph actually begins on page 13, line 28 of the original specification.

Applicants replace the paragraph beginning on page 18, line 1, however, this replacement paragraph actually begins on page 16, line 11 of the original specification.

Applicants replace the paragraph beginning on page 20, line 27, however, this replacement paragraph actually begins on page 19, line 6 of the original specification.

Applicants replace the paragraph beginning on page 21, line 27, however, this replacement paragraph actually begins on page 20, line 6 of the original specification.

Applicants replace the paragraph beginning on page 22, line 8, however, this replacement paragraph actually begins on page 20, line 16 of the original specification.

Applicants replace the paragraph beginning on page 23, line 13, however, this replacement paragraph actually begins on page 21, line 22 of the original specification.

Applicants replace the paragraph beginning on page 24, line 24, however, this replacement paragraph actually begins on page 23, line 4 of the original specification.

Applicants should review any amendment to the specification to make sure it correlates to the page and line numbers of the original specification.

Although the amendments to the specification filed 4/18/05 have not been entered for the above reasons, applicants are reminded that the patent number defined on page 6, last line

(6,129,549) of the paper filed 4/18/05 (amendments to specification paper) is wrong and should actually be 6,129, 540.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

Reference numbers "402" and "404" as defined in figure 4A are not in the specification (applicants are reminded that the amendments to the specification filed 4/18/05 have not been entered for the reasons above).

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are also objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

On pages 24-25, applicants define '600-606', '608-614' and '616-622', however, all of the numerical characters within the individual sets are not defined in figures 6A and 6B (i.e.

characters 601, 603, 605, etc. are not defined in the drawings but the above sets imply these numbers). Applicants are reminded that the amendments to the specification filed 4/18/05 have not been entered for the reasons above.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are also objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "20" (page 3, line 28) and "10" (page 12, line 16) have both been used to designate "the abrasive article" in figure 1.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-6, 8-14 and 16-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The new matter added to the independent claims is the limitation "do not exhibit a sum of zero" because the specification, as originally filed, does not provide **clear** support for this. The specification only defines that the sum "does not **approach** zero" and a "sum approaching zero" is **not** the same as "a sum of zero", thus the limitation "do not exhibit a sum **approaching** zero" is not the same as the newly claimed limitation "do not exhibit a sum of zero". Approaching implies and is defined as (1) to be very close to and (2) to come very near to. It is clear that approaching zero is not the same as a definitive zero point.

New dependent claims 17-18 are also considered new matter because the specification, as originally filed, does not provide **clear** support for this. Applicants state that Figure 5 of the application supports this, however, although the figure shows protruding units, the examiner is

unclear as to how this defines that the offset vectors are the same. The same means no discrepancy between the offset vectors. However, although the figure might show to the unaided eye that the vectors can be the same, examination of the units under a microscope might depict a small discrepancy between the vectors, thus they are not the same. In view of this, the reliance on the figure alone, does not provide clear support for the new claims in the absence of a distinct teaching thereof.

Claims 1-6, 8-14 and 16-18 are rejected under 35 U.S.C. 103(a) as obvious over Hoopman (097).

Hoopman teaches in column 8, line 65-column 9, line 2, column 16, lines 47-60, column 19, line 47-column 20, line 49, column 22, lines 3-45, the claims and figures 1, 2 and 8, a coated abrasive and method of making it, wherein the method comprises the claimed specific steps and uses protruding units. The protruding units (composites) can be of various shapes defined and the angle of intersection of the abrasive composites is different. The base of the composites do not abut one another. The composites differ in a dimension from each other.

The reference teaches an abrasive article comprising a backing and an abrasive array of abrasive composites, wherein the abrasive array comprises protruding units which read on claimed limitations. With respect to the "offset vector" limitation, although not literally disclosed, it is the examiners position that the figures and the disclosure of claim 1 (angle of intersection of the abrasive composites is different) shows or suggests that the composites all define offset vectors between the projection of the distant region and a center point of the base. The figures clearly show this because as can be seen from the figures, the apex (or vertex) of

composites is offset from the center point of the base. With this structure clearly being shown, it is the examiners position that the offset vectors of the individual composites can be such that the sum is not zero, thus making this limitation obvious. The reference teaches in column 8, line 65-column 9, line 2, various shapes for the protruding units (cubic, pyramidal...conical **and the like**) and it is the examiners position that these shapes makes the claimed limitations obvious because said shapes encompasses shapes having the claimed distal regions and bases, absent evidence to the contrary. The recitation of "conical" as defined by the reference encompasses composites have four convexly curved sides and all meet at a common vertex (i.e. curvilinear distal region). Assuming arguendo, the reference implies that the composite can be of **any** shape (i.e. the phrase "and the like" implies any) and this broadly makes obvious shapes having the claimed distal regions absent evidence to the contrary. With respect to claims 17 and 18, the reference states that the abrasive composite differs in a dimension from each other. Since it is defined as differing in **a** dimension, this can include a differing in the height of the composite, with the same apex being apparent. With the same apex being apparent, the offset vectors will be the same absent evidence to the contrary.

Claims 1-6, 8-14 and 16-18 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over all the claims of copending Application No. 10/668,799 alone or in view of Hoopman (097). Although the conflicting claims are not identical, they are not patentably distinct from each other because the reduction to practice of the copending claim would render obvious the instant claims. Although the copending claims do not literally define the offset vector limitation, one can look to the

specification of the copending application for a definition of what is meant by the recited structure, the recited structure being clearly defined by an offset vectors as shown in figures 5, 6A and 6B of the copending application. In addition, notwithstanding the definition defined in the specification, the claims imply that the apex of each structure is at a non central point when projected onto the base, thus reading on a set of offset vectors that do not exhibit of a sum zero. With respect to the distal regions and base, although the copending claims do not literally define this, it is the examiners position that the recitation of "rectangle" and distal regions, in general, broadly can encompasses the claimed shapes absent evidence to the contrary. In the alternative, the use of any conventional shape for the distal region and base is are clearly within the scope of the skilled artisan because Hoopman clearly implies that these shapes for abrasive composites are conventional in the art, as defined above. The motivation, although not literally defined, is that one skilled in the art would have appreciated the shape of abrasive composites depending on the desired application. With respect to the "abutting" limitation, although not defined, the selection of the nature of the composite coating is well within the level of ordinary skill in the art depending on the end use of the article. In the alternative, the concept of using non abutting composites is clearly shown by Hoopman, thus this type of pattern is clearly within the scope of the skilled artisan in the manufacture of abrasive articles comprising abrasive composites. The motivation, although not literally defined, is that one skilled in the art would have appreciated the pattern of abrasive composites depending on the desired application. In addition, non abutting composites will provide a conduit for the flow of swarf and liquid during use of the article and it is the examiners position that this will optimize the product by preventing premature clogging absent evidence to the contrary.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Applicant's arguments filed 10/12/05 have been fully considered but they are not persuasive.

As argued in the previous response of 4/18/05, applicants admit that some of the composites of the references have an apex that is offset from the center of the composite base but argue that this is random and that the sum of the vectors does not ***appear*** to approach zero, as can be seen in figure 8. In the response dated 10/12/05, applicants argue that since the distal regions is random, one would expect the sum of the offset vectors is zero. The examiner is unclear as to this argument because if it is random, why is the sum expected to be zero? To the contrary, if the distal regions were controlled, the sum might be zero. A random distribution does not necessarily mean that the sum is zero. If applicants are basing this argument on facts, they are requested to submit proper evidence. It is the examiners position that applicants position above **appears to be an opinion** and is not substantiated with facts supporting said position. Applicants appear to argue that the reference does not recognize the advantage of having the distal regions offset and/or the same, as required by the claims. The examiner acknowledges this but has previously stated that although the "offset vector" limitation is not literally disclosed, it is the examiners position that the figures and the disclosure of claim 1 **(angle of intersection of the abrasive composites is different)** shows or suggests that the composites all define offset vectors between the projection of the distant region and a center point of the base. The figures clearly show this because as can be seen from the figures, the apex (or vertex) of composites is offset

from the center point of the base. With this structure clearly being shown, it is the examiners position that the offset vectors of the individual composites can be such that the sum is not zero, thus making this limitation obvious (applicants have not presented clear evidence to the contrary). In addition, the examiner fails to see any clear advantages defined by the claimed invention that would establish patentability of the claims over the reference (the declaration will be commented on below). Applicants argue the figures but again, applicants argument is not substantiated with facts. Finally, not withstanding the figures (which can be considered the preferred embodiments), the examiners has also made an observation with respect to the angle of intersection **(angle of intersection of the abrasive composites is different)** thus suggesting that the composites all define offset vectors between the projection of the distant region and a center point of the base. Applicants focus on the figures and do not argue this point made by the examiner. As is well known, **"A reference can be used for all it realistically teaches and is not limited to the disclosure in its preferred embodiments" See *In re Van Marter*, 144 USPQ 421.** If the apex of the reference structures can be offset, how can applicants make a statement that the sum of offset vectors of the reference structures is zero without any evidence substantiating this? In summary, although the reference is silent with respect to the offset vector limitation, one would appreciate that randomness would have resulted in an abrasive array that that does not have vectors summing to zero absent clear evidence to the contrary. If all of the composite where the same, the vector sum might be zero, but since they are different, one would not necessarily expect the sum to be zero.

The examiner acknowledges the declaration filed with the response but this declaration is not sufficient to overcome the previous rejection because applicants comparative example is for

a peak vectors that are summed to zero but applicant have not clearly shown that the reference composite structure meets the requirement that the vectors are summed to zero. Since applicants statement that the sum of the vectors of the reference would be expected to be zero is **not** convincing absent evidence, the examiner fails to see how the declaration provides evidence of unexpected results. As clearly set forth in part 7 of the declaration, the structures evaluated where **similar** to that illustrated in figures 5 and 8 of the reference, however, a comparison with a **similar** structure (and not the exact structure of the reference) is insufficient to overcome the above rejection. In other words, if the declaration is based on a **similar** structure and not the exact structure of the reference, how could the declaration show unexpected results when the exact reference structure is not being compared with the claimed structure. Applicants appear to be focusing on the reference figures, but as is known, a reference can be used for all it realistically teaches and since applicants have not clearly shown that the vectors of the reference are in fact summed to zero, no evidence of criticality is established.

With respect to the ODP rejection, absent any arguments or a TD, this rejection is upheld.

In view of the teachings as set forth above, it is the examiners position that the references reasonably teach or suggest the limitations of the rejected claims.

Evidence of unexpected results must be clear and convincing. *In re Lohr* 137 USPQ 548. Evidence of unexpected results must be commensurate in scope with the subject matter claimed. *In re Linder* 173 USPQ 356.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael A Marcheschi
Primary Examiner
Art Unit 1755

12/5/05
MM